

REMARKS

Claims 1-10, 12-16,26 and 27 are pending in the application.

Claims 1-10, 12-16,26 and 27 are rejected.

Claims 1-10, 12-16,26 and 27 remain in the case.

Applicant requests reconsideration and allowance of the claims in light of the above amendments and following remarks.

Claim rejections – 35 U.S.C. § 103

Claims 1,3-4,6-10,13,26 and 27 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,468,994 to Pendse (“Pendse”) in view of U.S. Patent no. 6,232,561 to Schmidt, et al (“Schmidt”).

Applicant respectfully traverses the rejections.

Independent claims 1, 13, and 26 all recite a substrate with a redundant bond finger. The redundant bond finger is on the substrate to complete the connection from the added bond pad on the semiconductor chip to a solder ball. A normal wire bonding unit connects the added bond pad on the chip to the redundant bond finger. Then, an added wire bonding unit connects the redundant bond finger on the substrate to an added bond finger on the substrate, with the added bond finger electrically connected to a solder ball.

Thus, with embodiments of the present invention, the existing package substrate can still be used without changing the package substrate design, and without adding a micro-via hole to the substrate, by utilizing the added wire bonding unit that is coupled between a redundant bond finger and an added bond finger, even if semiconductor chip design is changed slightly.

None of the cited references teach or suggest such inventive concepts or benefits of the present invention. For example, Pendse is merely directed to a cost effective package for integrated circuits having a large number of I/O connections. See col. 8, lines 1-3 and abstract of Pendse. What is more, the Examiner cites ground bar 16 in Pendse as being a redundant bond finger. Pendse discloses, however, at column 5, lines 23-25, “the ground bar 16 and ground pads are electrically connected to the substrate 22 which operates as a ground plane for the integrated circuit.” If one were to attempt to use the ground bar 16 as a redundant bond finger, the resulting device would fail because the connection from the added bond pad on the chip would short out to ground. Thus, the ground bar 16 in Pendse cannot be a redundant bond finger as recited in independent claims 1, 13, and 26.

In addition, the connection surface 4 and the conductor path 3 in Schmidt are neither redundant nor added bond fingers. Schmidt discloses merely connecting electronic

component connections 5 in one-to-one relationship to conductor paths 3. Consequently, Schmidt does not disclose *added* bonding fingers. The connection surfaces 4 in Schmidt are not *redundant* bonding fingers. These connection surfaces 4 are merely intermediate surfaces providing a path between each of the component connections 5 and conductor paths 3.

The combination of Pendse and Schmidt fails to disclose each and every element of independent claims 1, 13, and 26, thus failing to present a *prima facie* case for obviousness. These independent claims, therefore, are believed to be allowable over the combination of Pendse and Schmidt and the applicant respectfully requests their allowance.

Claims 3-4 and 6-10 depend from independent claim 1 and claim 27 depends from independent claim 26. For at least the reasons given for claims 1 and 26, these claims are believed to be allowable and the applicant respectfully request their allowance.

Claims 2,5,12,14 and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Pendse in view of Schmidt, et al., and further in view of Applicant Admitted Prior Art (AAPA).

Claims 2, 5 and 12 depend from independent claim 1 and claims 14 and 15 depend from independent claim 13. Adding the AAPA still fails to disclose operable redundant bonding fingers and added bonding fingers recited in independent claims 1 and 13. Thus, for the same reasons given for independent claims 1 and 13, these claims are believed to be allowable and the applicant respectfully requests their allowance.

For the foregoing reasons, reconsideration and allowance of claims 1-10, 12-16, 26 and 27 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,
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Limited Recognition Under 37 CFR 10.9(b)

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